BEITRAG ZUM STUDIUM DER MEDULLA OBLONGATA, DES KLEINHIRNS, UND DES URSPRUNGS DER GEHIRNNERVEN.—By S. Ramón y Cajal. German translation by Johannes Brasler, with an introduction by E. Mendel. Leipzig: Johann Ambrosius Barth, 1896.

This recent work from the pen of Ramón y Cajal consists of nineteen separate monographs. The results are obtained from investigations on the brains of the lower animals. Some of the most important statements are the following:

The sensory root of the fifth nerve divides on entering the pons into ascending and descending branches. Many of the axis cylinders from the cells of the substantia gelatinosa cross the raphe and form the central sensory tract within the internal lemniscus, while others remain on the same side of the pons. Collaterals are sent by these fibres to the motor nuclei, especially to the facialis and the vagus.

The descending root of the fifth nerve situated near the aqueduct of Sylvius, is purely motor. The large cells of this root probably have no protoplasmic processes. The cell body receives directly the nerve impulse.

Cajal has failed in every attempt to show a connection of the pyramidal tract with the chief motor nucleus of the trigeminus.

The fibres of the anterior cerebellar peduncle arise in the dentatum, though some may have their origin in the cerebellar cortex. At the point of exit from the cerebellum many of the fibres of this peduncle give off a large descending collateral or bifurcation branch. These fibres issue from the descending cerebellar tract, or lateral descending cerebellar bundle (Cajal), and are situated within the substantia reticularis crisea, internal to the substantia gelatinosa of the trigeminus. Collaterals are given by this cerebellar bundle to the chief motor nucleus of the trigeminus, to the nucleus of the facialis, to the cells of the substantia reticularis grisea, and possibly to the nucleus ambignus and the nucleus of the abducens.

The fibres of Meynert's bundle arise in the habenula and terminate in the interpeduncular ganglion.

The axis cylinders from the cells of the lower olive either cross the raphe—the more common course—and pass through the opposite olive, or else they form part of the anterior arciform fibres. It is probable that fibres of the inferior cerebellar peduncle arise within the lower olive, but it is also probable that the olive receives axis cylinders from the cells of Purkinje.

The sensory fibres of the vagus and of the glossopharyngeus form one common root—the fasciculus solitarius. They differ from most sensory fibres in that they do not give origin to ascending branches. The gray masses accompanying the solitary bundles unite to form the commissural nucleus (Cajal). This nucleus lies between the ependyma and the most external fibres of the gray commissure within the cervical cord. Three-fourths of the fibres of the solitary bundles, after decussating, terminate within this nucleus. The axis cylinders from the cells of the commissural nucleus form a central tract close to the sensory tract of the fifth.

Fibres were observed by Cajal to pass from the motor roots of the ninth and tenth nerves to the descending sensory root of the trigeminus.

Some of the end fibres of the column of Goll terminate in the nucleus of the opposite column.

Many of the fibres of the central sensory tract arising in the nuclei of Goll and Burdach, after decussating in the raphe, divide into ascending and descending branches.

The pyramidal tract gives origin to no collaterals during its course, and loses none of its fibres, except at the decussation; at this point it sends collaterals to the lower olive.

(He is not speaking of the spinal portion of this tract.)

The posterior longitudinal bundle contains ascending fibres of the second order, as well as some descending fibres and axis cylinders from the red nucleus. Within this bundle are found: 1, fibres from Deiters' nucleus; 2, fibres from cells in the substantia gelatinosa of the trigeminus, and 3, fibres from cells within the white reticulated substance. The first group is the most important, and from these fibres numerous collaterals are given to the motor nuclei of the eye muscles.

The fibres of the vestibular nerve divide into ascending and descending branches. Some of the ascending terminate in the nuclei of Deiters and v. Bechterew; most, however, pass into the acoustic cerebellar bundle, and may be traced to the tegmental nucleus. Possibly some fibres pass to the dentatum and the cerebellar cortex. The numerous collaterals from the descending branches form the chief termination of the vestibular nerve. They enter the descending (chief) nucleus and Deiter's nucleus. Axis cylinders from Deiter's and Bechterew's nuclei either form a bundle in front of, and external to the nucleus of the abducens—the external or direct tract—or else they constitute the chief portion of the opposite posterior longitudinal bundle, the inner crossed tract.

The fibres of the cochlearis divide in the ventral ganglion into ascending and descending branches. The former terminate in the ventral nucleus, the latter pass to the posterior part of this nucleus and into the acoustic tubercle.

Axis cylinders from the cells of the ventral nucleus pass into the corpus trapezoides.

Axis cylinders of the tuberculum acousticum, Cajal believes, enter either the corpus trapezoides or the striæ acusticæ.

The remarkable nerve terminations within the trapezoid nucleus described by Held, have been seen by Cajal. He regards them as true central nerve plates.

Cajal, with other investigators, believes that the anterior pillars of the fornix arise in the cornu ammonis.

Connection of the sensory root of the trigeminus with the facial nucleus is by means of axis cylinders from cells in the substantia gelatinosa.

The fibres within the gray reticulated substance form a sensory tract of the third order, and convey sensory impulses to the motor nuclei.

The central tract of the trigeminus, vagus, glosso-pharyngeus and vestibularis is in the posterior outer portion of the gray reticulated substance.

WM. G. SPILLER.

ANOMALIES AND CURIOSITIES OF MEDICINE. By George M. Gould, A.M., M.D., and Walter L. Pyle, A.M., M.D. With 295 illustrations, etc. Philadelphia, W. B. Saunders, 1897.

The character of this work is indicated very fully by the title, and its appearance is justified by the excellent collection of a large number of interesting facts which the authors have carefully compiled and commented upon.

Beginning with genetic anomalies, all sorts of abnormalities due to defective or abnormal development are described. Then a number of chapters are devoted to the surgical anomalies, of the thorax and abdomen, as well as of the genito-urinary system. In several chapters anomalous types of diseases of varying kinds are recorded, including such as are by this time rather well known, viz., acromegaly, myxedema and trichinosis. But in every instance some rather unusual feature of these diseases is indicated.